

## ABSTRACT OF THE DISCLOSURE

LAYERED  $\text{SO}_x$  TOLERANT  $\text{NO}_x$  TRAP CATALYSTS AND  
METHODS OF MAKING AND USING THE SAME

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The present invention relates to a layered catalyst composite useful for reducing contaminants in exhaust gas streams, especially gaseous streams containing sulfur oxide contaminants. More specifically, the present invention is concerned with improved catalysts of the type generally referred to as "three-way conversion" catalysts. The layered catalysts trap sulfur oxide contaminants which tend to poison three-way conversion catalysts used to abate other pollutants in the stream. The layered catalyst composites of the present invention have a sulfur oxide absorbing layer before or above a nitrogen oxide absorbing layer. The layered catalyst composite comprises a first layer and a second layer. The first layer comprises a first support and at least one first platinum component. The second layer comprises a second support and a  $\text{SO}_x$  sorbent component having a free energy of formation from about 0 to about -90 Kcal/mole at 350°C. The sulfur oxide absorbing layer selectively and reversibly absorbs sulfur oxides over nitrogen oxides and prevents or alleviates sulfur oxide poisoning of the nitrogen oxide trap.

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